

Building Instructions for Laparoscopic Surgical Trainer

1. Build the laparoscopic surgical trainer

Cut the 1-in x 2-in lumber into four 3-ft sections and four 2-ft sections. Set the extra wood pieces to the side for later use. Using a counter-sink drill bit, pre-drill holes into the 1-in x 2-in boards to prevent splitting. Use 2½-in wood screws to fasten the 1-in x 2-in boards to each other, forming two 3-ft 2-in x 2-ft 2-in rectangles, as shown in Figure 1.

Cut the PVC shower pan liner into a 3-ft 2-in x 2-ft 2 rectangle. (Save the leftover material to replace the current liner if it becomes overly used.) Lay the PVC shower pan liner over one of the rectangles and use wood glue to attach it to the wood rectangle. Let the glue dry. Apply wood glue to the other rectangle and lay it on top of the shower pan liner, as shown in Figure 1. Let the glue dry. Use 1½-in wood screws to further secure the two wood rectangles together.

Bend the two corner braces to form an angle between 45° and 60°. Attach a corner brace on each side of the rectangle, as shown in Figure 1. Cut two 1-ft sections from the remaining wood board. Attach the other side of the corner brace to a 1-ft wood board section using the screws that were included with the corner brace kit, so that the laparoscopic surgical trainer can stand on its own.

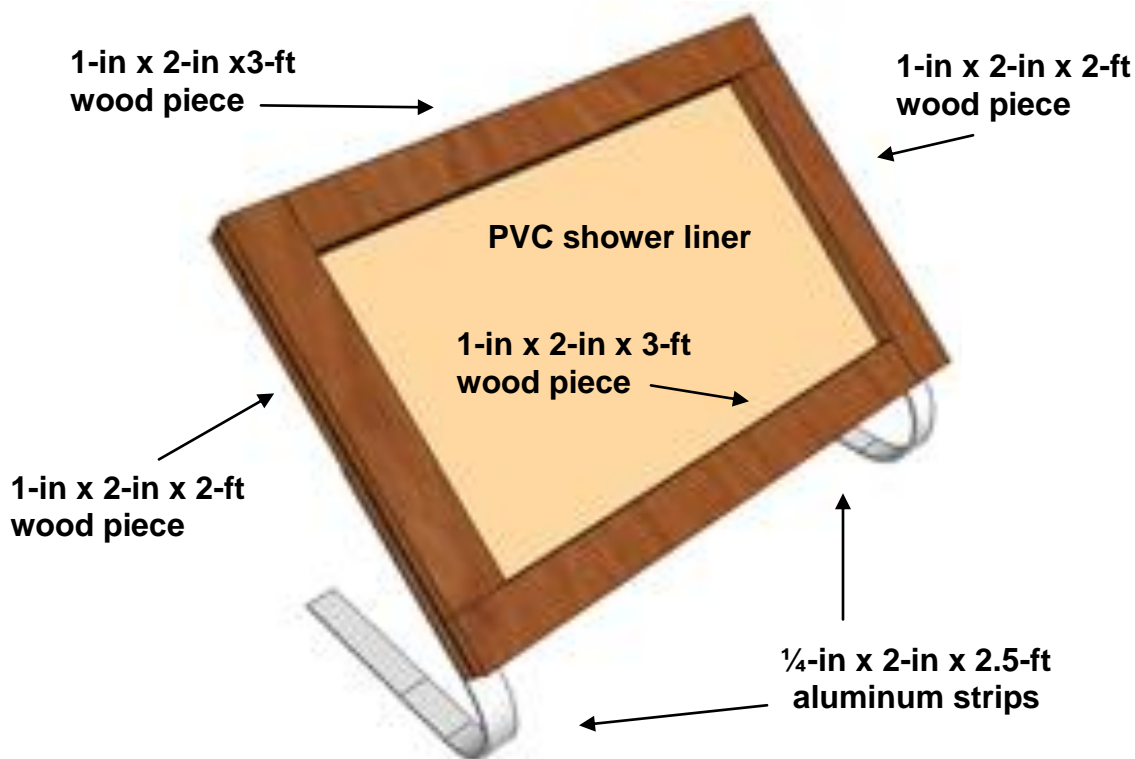


Figure 1. Handmade laparoscopic trainer — a wooden frame around a latex rubber sheet with curved aluminum strips as support legs.

2. Build the stretch and dissect block

Drill four equally spaced holes in the 2 x 2 x 7-in block so that the alligator clips fit in the holes, as shown in Figure 2. Use wood glue to secure one alligator clip in each hole.

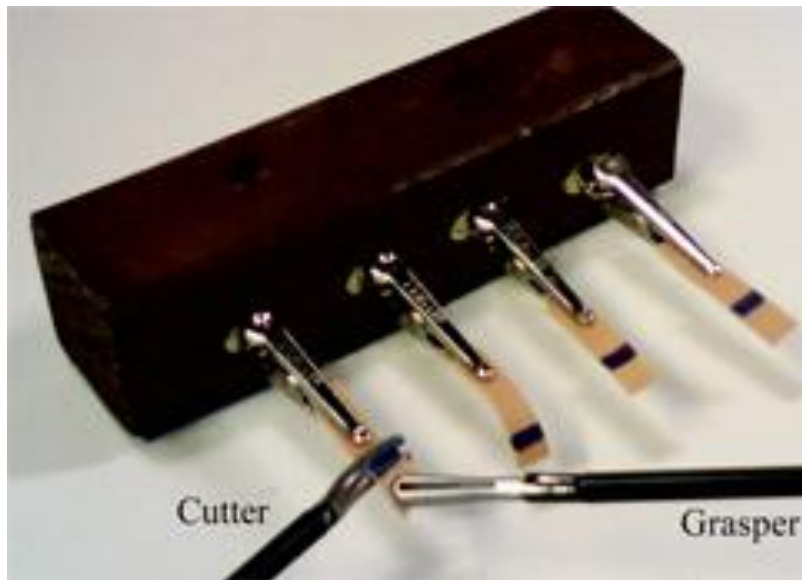


Figure 2. Stretch and dissect block — a block of wood with four alligator clips, each clamping a piece of rubber band marked with a black line.

3. Build the puffball holder

Cut the PVC tubing into four $\frac{3}{4}$ -in pieces. Use the Liquid Nails adhesive to affix the tubing pieces onto the acrylic sheet, as shown in Figure 3.

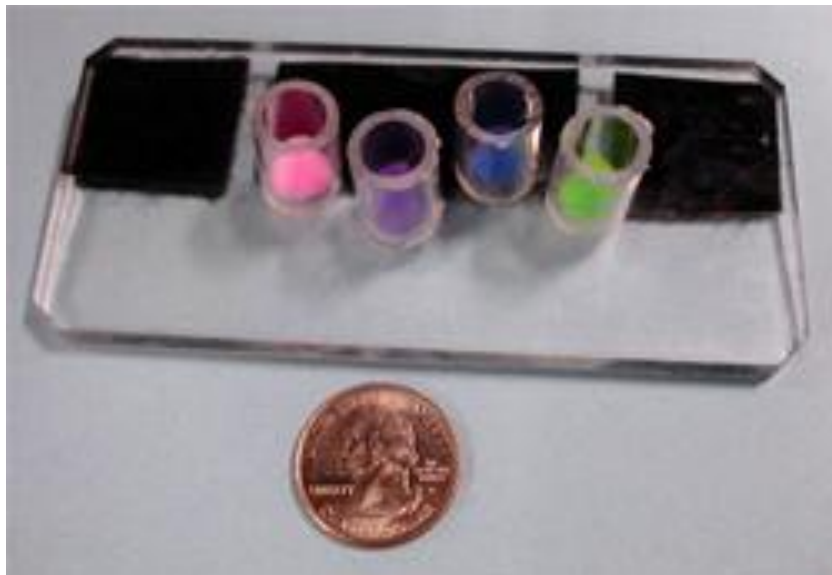


Figure 3. Puffball holder — a sheet of clear acrylic with four vertical plastic cylinders, each containing a mini puffball of a different.

Image source for Figures 1, 2, 3: Benjamin S. Terry, ITL Program, College of Engineering, University of Colorado Boulder